Chapter 2. PROJECT DESCRIPTION

2.1 Project Objectives

The proposed project is the regulation of Pacific herring fisheries under the State's jurisdiction. The regulations are considered for inclusion in the California Code of Regulations (CCR) to implement the State's policies for managing the commercial use of Pacific herring [Sec 1.5 [2]]. The proposed project and alternatives take the form of recommendations for continuation, amendment, or change to an existing body of regulations (Sections 163, 163.5, and 164, Title 14, CCR). The recommendations and alternatives are based on biological assessments of existing stock conditions and comments received from interested individuals, commercial fishermen, and from the Director's Herring Advisory Committee. The California Fish and Game Commission, whose members are appointed by the Governor, has legislatively delegated authority to act on these recommendations.

Project objectives include:[1]

- maintaining healthy Pacific herring stocks in California;
- controlling commercial use of Pacific herring at optimal levels;
- providing sufficient Pacific herring to support recreational uses; and
- providing sufficient Pacific herring to conserve living resources of the ocean that use herring.

Under existing law, herring may be taken for commercial purposes only under a revocable permit, subject to such regulations as the Commission shall prescribe. Current regulations specify: permit qualifications, permit validation requirements, permit limitations, permit areas, seasons, fishing quotas, gear restrictions, and landing and monitoring requirements.

In addition to these regulations, the proposed project includes recommendations for amendments to existing regulations to establish fishing quotas by area and gear type for the 1998-99 herring fishing season. Quota recommendations for San Francisco Bay and Tomales Bay are based on the most recent assessments of the size of the spawning populations of herring in those areas. Other recommendations suggest new regulations to improve the efficient and orderly conduct of herring fisheries.

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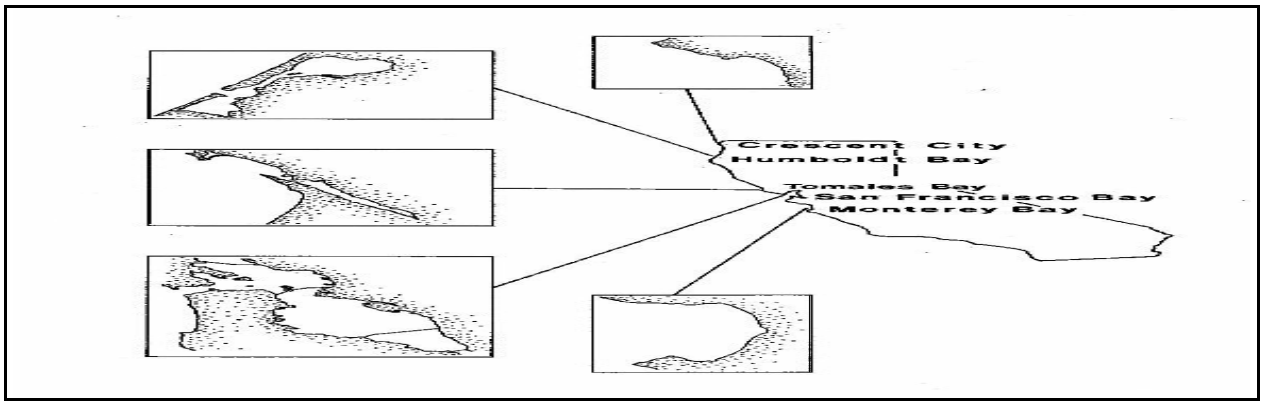
[1] In the sections to follow, references will be provided linking pertinent points in this document. The linking will reference appropriate subsection numbers within brackets ([#,#,#,]).



2.2 Project Locations

Permits have been issued for commercial herring fishing in five geographically distinct areas of the ocean and estuarine waters under the jurisdiction of the state of California (Figure 2.1). Many of the regulations considered by this document are specific to an area and type of fishing operation. Within each broad geographical fishing area, additional regulations may further limit the area fished. This section describes each area, including current commercial uses for herring, proposed seasons and quotas for those uses, and any geographical restrictions on those uses. A more complete description of the environmental setting for each geographical fishing area is provided in Section 3.3. (Specific Biological and Environmental Descriptions).

2.2.1 Ocean Waters

Use: bait and animal food

Season: April 1 to November 30 (Pigeon Point, San Mateo County south to Yankee Point, Monterey County)

April 1 to October 31 (Pigeon Point, San Mateo County north to the California-Oregon boarder)

Quota: no limit

Area: ocean waters of District 6 (excluding the Crescent City area), 7, 10 (excluding Tomales Bay), 16, and 17

note: see District descriptions in Appendix 2

2.2.2 San Francisco Bay

2.2.2.1 Herring Roe Fishery

Season: noon on December 2 until noon on December 22, and 5:00 p.m. on January 3 until noon on March 12.

note: herring fishing is not permitted from noon Friday through 5:00 p.m. Sunday.

Gill net permittees (DH) December 2-4, December 6-11, December 13-18, December 20-22, and, if necessary, after other platoons have reached their quotas until DH quota is reached or last day of season.

Gill net permittees (Even #) January 3-8, January 17-22, January 31-February 5, February 14-19, February 28- March 5.

Gill net permittees (Odd #) January 10-15, January 24-29, February 7-12, February 21-26, March 7-12.

Quota: 20 percent exploitation rate 3,980 tons for gill net permittees.

15 percent exploitation rate 2,980 tons for gill net permittees.

Zero percent exploitation rate No fishery.

note: the overall quota for the roe fishery will be reduced by transfers to the eggs-on-kelp fishery.

Area: Waters of Districts 12 and 13 and that portion of District 11 lying south of a line extending from Peninsula Point (the most southerly extremity of Belvedere Island) to the easternmost point of the Sausalito ferry dock.

1) Regulations prohibit the setting or operating of nets within 300 feet of the following piers and recreation areas: Berkeley Pier, Paradise Pier, San Francisco Municipal Pier between the foot of Hyde Street and Van Ness Avenue, Pier 7 (San Francisco), Candlestick Point State Recreation Area, the jetties in Horseshoe Bay, and the fishing pier at Fort Baker. Regulations also prohibit the setting or operating of nets within 70 feet of Mission Rock Pier.

2) Regulations prohibit the setting or operating of nets in Belvedere Cove north of a line drawn from the tip of Peninsula Point to the tip of Elephant Rock. Regulations also prohibit the setting or operating of gill nets from November 30 through February 15 in the area bounded by a line drawn from the middle anchorage of the western section of the Oakland Bay Bridge (Tower C) to the Lash Terminal buoy #5 to the easternmost point at Hunter's Point (Point Avisadero), from Point Avisadero to the Y"A" buoy, from the Y"A" buoy to Alameda NAS entrance buoy #1 (entrance to Alameda Carrier Channel) to the Oakland Harbor Bar Channel buoy #1, and then to from the first Bar Channel buoy to Tower C of the Bay Bridge.

2.2.2.2 Herring Eggs-On-Kelp Fishery

Season: December 1 to March 31

Quota: 20 percent exploitation rate an individual quota of 7.0 tons for transferred "CH" permits, an individual quota of 1.9 tons for transferred gill net permits.

15 percent exploitation rate an individual quota of 5.3 tons for transferred "CH" permits, an individual quota of 1.4 tons for transferred gill net permits.

Zero percent exploitation rate No fishery.

note: the combined quota for harvest of herring eggs-on-kelp depends on the number of "CH" and gill net permits transferred to the herring eggs-on-kelp fishery.

Area: Waters of Districts 11, 12, and 13, and that portion of District 2 known as Richardson Bay.

note: the area open to the herring eggs-on-kelp fishery is further restricted. Rafts and lines may not be placed in any waters or areas otherwise closed or restricted to the use of herring gill net operations, except the areas known as Belvedere Cove and Richardson Bay or except where written permission is granted by the owners or controlling agency (e.g., Navy, Coast Guard). When rafts or lines are placed in Belvedere Cove or Richardson Bay, they must be tied to a permanent structure (e.g. pier, dock).

2.2.2.3 Fresh Food Fishery (not for roe purposes)

Season: November 2 through November 29 and April 1 through October 31.

Quota: 20 tons

note: no permittee may take or possess herring except in the amount specified on a current daily market order, not to exceed 500 pounds, from a licensed fish dealer.

Area: Same as herring roe fishery

2.2.3 Tomales Bay

2.2.3.1 Herring Roe Fishery

Season: 5:00 p.m. on January 3 until noon on March 12.

note: herring fishing is not permitted from noon Friday through 5:00 p.m.

Sunday.

Quota: **The total take of herring for roe purposes shall not exceed 90 tons for the season. However, if spawning escapement, as determined by the Department, reaches or exceeds 1,590 tons prior to February 15, the quota shall be increased as follows: 1) if spawning escapement is more than 1,590 tons, the total take of herring shall not exceed 190 tons for the season; 2) if spawning escapement is more than 2,590 tons, the total take of herring shall not exceed 290 tons for the season; 3) if spawning escapement is more than 3,590 tons, the total take of herring shall not exceed 390 tons for the season; and 4) if spawning escapement is more than 4,590 tons, the total take of herring shall not exceed 490 tons for the season. The total take of herring for the fresh fish market shall not exceed 10 tons per season.**

Area: Tomales Bay includes the waters of District 10 lying south of a line drawn west, 252^{o} magnetic, from the western tip of Tom's Point to the opposite shore.

2.2.3.2 Fresh Food Fishery (not for roe purposes)

Season: November 2 through November 29 and April 1 through October 31.

Quota: 10 tons

note: no permittee may take or possess herring except in the amount specified on a current daily market order, not to exceed 500 pounds, from a licensed fish dealer.

Area: Same as herring roe fishery.

2.2.4 Humboldt Bay

Use: herring roe

Season: noon January 2 until noon March 10.

Quota: 60 tons

Area: waters of Districts 8 and 9.

2.2.5 Crescent City Area

Use: herring roe

Season: noon January 15 until noon March 24.

Quota: 30 tons

Area: Crescent City Harbor and waters of District 6 less than 20 fathoms in depth

between two nautical measure lines drawn due east and west true from Point Saint George and Sister Rocks.

2.3 Project Characteristics

Pacific herring are schooling fish that are generally captured for commercial purposes by using entangling or encircling nets. The proposed project recommends continuation of the existing regulations as modified by those changes discussed below to control the commercial harvest of herring to a level that meets the state's policy with respect to the use of aquatic resources. This section states the specific purpose of the regulations and summarizes the factual basis for the regulation.

The commercial herring roe and eggs-on-kelp fisheries are closely regulated through a catch quota system to provide for adequate protection and utilization of the herring resource. The Department conducts annual assessments of the size of the spawning population of herring in San Francisco and Tomales Bays [Sec 3.2.2.1]. These data serve as the basis for establishing fishing quotas for the next season. In addition, annual management recommendations to improve or provide for the efficient harvest and orderly conduct of the herring fisheries are solicited from interested fishermen and individuals at public meetings and from the Director's Herring Advisory Committee, which is composed of various representatives from the commercial herring fishing industry. The following proposed amendments to Section 163, 163.5 and 164, Title 14, CCR, reflect both Department and public recommendations.

Annual assessments of the size of the herring spawning populations in San Francisco and Tomales Bays are conducted by the Department, using both hydroacoustic and spawning ground surveys. Hydroacoustic surveys use sound transmitted from a transducer on a boat and record returning echoes to determine the size and density of fish schools [Sec 3.2.2.1.2]. Spawning

ground surveys assess the total number of eggs spawned and back calculate the parental population size [Sec 3.2.2.1.1]. Annual fishing quotas are conservative and limit the total commercial catch to no more than 20% (exploitation rate) of the previous season's spawning biomass. This exploitation level was selected, based on computer simulations [Sec 3.2.4], to help ensure adequate protection for the herring resource and to provide for the long-term yield of the fishery. However, quotas are not determined by a fixed mathematical formula, but are modified based on additional biological and fishery data collected each season, such as growth rates, strength and importance of individual year-classes, and recruitment of incoming year-classes.

The 1997-98 El Niño is one of the strongest on record, and strongly affected California's herring stocks. El Niño events are generally characterized by elevated water temperatures and nutrient-depleted water masses which result in reduced ocean productivity and prey availability. El Niño conditions can result in reduced survival rates, growth rates, and condition factor of herring. In addition, the warm water temperatures associated with El Niño events can cause the distribution of herring stocks to temporarily shift north of their normal spawning grounds.

By late October 1997, upwelling had declined off central California and temperatures had increased in nearshore waters. This change in oceanographic conditions had a significant effect on the San Francisco Bay herring stock: (1) the 1997-98 spawning biomass estimate for San Francisco Bay was 20,000 tons (including catch), 22 percent of last season's estimate of 89,570 tons and far below anticipated levels; (2) the weight of the herring at any given length was below normal; (3) many of the herring that entered the bay were not in spawning condition; and (4) many females were reabsorbing their eggs.

At present, El Niño conditions are subsiding at the equator. However, at this time, it is not clear

how quickly waters off California will change when the El Niño event ends. A clearer picture should be available by August.

Due to the uncertainty that currently exists regarding the continuing effects of the 1997-98 El Niño event, three alternative fishing quotas are proposed for San Francisco Bay: (1) 4,000 tons, which is 20 percent of the 1997-98 spawning biomass estimate; (2) 3,000 tons, which is 15 percent of the 1997-98 spawning biomass estimate; and (3) no fishery. The 4,000-ton quota alternative takes into account the extremely low biomass estimate, and yet recognizes the strength of the 1992, 1993, 1994, and 1995 year-classes. It would be most appropriate if local effects of the El Niño event subside rapidly and ocean productivity is good through the spring and summer. The 3,000-ton quota alternative takes into account the extremely low spawning biomass estimate, and it would be most appropriate if the local effects of the El Niño event don't subside until the summer. The no-fishery alternative would be most appropriate if local effects of the El Niño event continue unabated. This alternative recognizes the potential for increased natural mortality and displacement due to El Niño conditions which may result in a significant decline in the size of the spawning biomass.

Within the overall quota in San Francisco Bay, separate quotas are established for each gill net platoon (i.e., fishing groups). The overall quota is divided among the three platoons in proportion to the number of permits in each platoon. Slight annual adjustments in the quota assignments for each gill net platoon are needed to account for attrition of permittees and the use of herring permits in the herring eggs on kelp fishery.

The 1997-98 spawning biomass estimate for Tomales Bay is 586 tons, down 60 percent from last season's estimate of 1,469 and well below the 5-year average of 2,820 tons. No clear trend is evident for spawning biomass since the reopening of the Tomales Bay herring fishery in the

1992-93 season. Heavy rains during the 1997-98 season drastically reduced salinity levels in the Bay and most likely inhibited spawning. The Department recommends continuing the existing conservative management regime and proposes an initial fishing quota of 90 tons (15 percent of the 1997-09 spawning biomass estimate). The proposed regulations also contain provisions to increase the quota based on in-season estimates of spawning escapement. If escapement goals are achieved prior to February 15, 1999, then the quota would be increased with the amount of the increase dependant on the level of escapement. If spawning escapement does not exceed 1,590 tons prior to February 15, 1999, then no additional fishing quota would be provided. Season opening and closing dates for San Francisco and Tomales bays, as well as the dates of various provisions of the regulations, are adjusted each year to account for annual changes in the calendar. The consensus of the Director's Herring Advisory Committee was to set the dates of the roe herring fisheries in San Francisco Bay from noon on Wednesday, December 2, 1998 to noon on Tuesday, December 22, 1998 ("DH" gill net platoon only), and from 5:00 p.m. on Sunday, January 3, 1999 to noon on Friday, March 12, 1999. This season the consensus among Tomales Bay permittees was to recommend opening at 5:00 p.m. on Sunday, January 3, 1999 and closing at noon on Friday, March 12, 1999.

Existing regulations require that permittees validate their roe herring permits each year by landing herring or by demonstrating intent to fish during the next season. This requires permittees to fish when biomass and quotas are low and when prices are low. The proposed amendments remove validation requirements and penalties for not validating a permit.

Existing regulations provide that all San Francisco Bay round haul permits will be converted to gill net permits prior to the 1998-99 season. Therefore, the proposed amendments remove all subsections of the regulations related to the use of round haul gear for herring in San Francisco

Bay, and all penalties specific to the use of round haul gear in the roe herring fishery.

Subsection 163(f)(2) provides gear specifications and limits where gill nets and round haul nets can be used. The proposed amendment prohibits the use of round haul nets to take herring in San Francisco Bay and clarifies that round haul nets may be used to take herring in ocean waters with an ocean waters permit. Existing regulations specify that herring taken with an ocean waters permit may not be sold for roe purposes; this remains unchanged.

Under subsection 163(j), a current "primary fish receiver's license" is needed to obtain a herring buyer's permit. The correct name for the license is a fish receiver's license (Fish and Game Code Section 8033). This amendment makes the name in the regulations consistent with the name in the code and clarifies the type of license that is needed.

Subsection 163.5(f)(2)(B)6 refers to a violation of subsection 163(e)(6) regarding the incidental take of fish other than herring. The proposed amendment makes subsection 163.5(f)(2)(B)6 consistent with subsection 163(e)(6):

Subsection 164(j)(3) specifies that a herring eggs on kelp permittee must notify the Department at least 12 hours prior to harvesting herring eggs on kelp on a weekday and give the following information: a description and point of departure of the vessel that will be used, the location of each raft and line, an estimated time for beginning each operation, and the time and location of off-loading product. Herring eggs on kelp permittees have stated that the herring school may move or weather may change during the 12 hours after they have notified the Department, and thus they may want to move a raft or change the time of harvesting or change the off-loading location. The permittees have requested that the regulations provide a means for changing the information provided if conditions change after notice has been given. The proposed modifications to the subsection are an effort to fulfill this request.

2.4 Project Alternatives

Three alternatives are considered in addition to the preferred alternative (proposed project). Although considered as separate alternatives, most alternatives take the form of additional proposed changes to the existing regulations that could feasibly be joined. In evaluating alternatives, the comparative merits and impacts of individual alternatives that could be logically and feasibly joined should be considered as so joined unless otherwise stated. The alternatives to be considered are as follows:

- Alternative 1 (no project alternative). Under this alternative, the commercial harvest of herring would be prohibited.
- Alternative 2 (existing regulations). Under this alternative, existing regulations would be modified only by adjusting quotas to reflect current biomass estimatesand by adjusting dates to reflect changes in the calendar.
- Alternative 3 (individual vessel quota for gill net vessels in herring roe fishery). Under this alternative the proposed regulations would be modified by establishing an individual vessel quota for all gill net vessels. The proposed individual gill net vessel quota would equal the overall gill net quota divided by the number of permittees using gill net gear.

The following section states the specific purpose of the alternatives and summarizes the factual basis for determining that the alternatives are reasonably necessary.

2.4.1 Alternative 1 (no project)

This is a CEQA required alternative.

2.4.2 Alternative 2 (existing regulations)

The only amendment or change suggested relates to adjusting quotas to reflect current biomass estimates and adjusting dates to reflect annual changes in the calendar.

2.4.3 Alternative 3 (individual vessel quota)

This alternative would establish an individual herring quota for all San Francisco Bay gill net permittees. Under existing regulations [Section 163(g)(4)(C), Title 14, CCR] an overall herring quota is established for each of three gill net groups (platoons) in San Francisco Bay. However, individual permittees may take and land as much fish (tonnage) as they are capable of until the overall quota for their respective group is reached. This amendment has been suggested each season for the past several years. However, there has never been a clear consensus of support or opposition among gill net fishermen about this issue. Those fishermen favoring an individual vessel quota argue that: it would encourage the use of larger-mesh gill nets which would increase the roe percentage/quality of fish; it would eliminate gear conflicts; it would allow permittees to "stack" more than one permit on a vessel and share overall operating and gear costs; it would remove the incentive to use an illegal number of nets; it would allow smaller boats to compete on an equal basis with larger or more efficient boats; it would eliminate all cheating; it would reduce enforcement needs and result in less gear damage and lost/abandoned nets.

Those fishermen opposed to an individual boat limit argue that: it is an unfair and unnecessary restriction of the free enterprise system; it would result in illegal and unreported landings; it would unnecessarily extend the herring season, resulting in higher operating costs; it would encourage the "sorting" of fish (discard of males) to increase the roe percentage; it is unenforceable; "non-competitive" fishermen would continue to have problems in spite of a vessel quota; it would not work with odd/even platoons fishing on alternate weeks because major spawning activity tends to occur on a bi-weekly basis. Also, the Department is concerned about the level of enforcement effort that would be necessary to effectively monitor and enforce such a provision.